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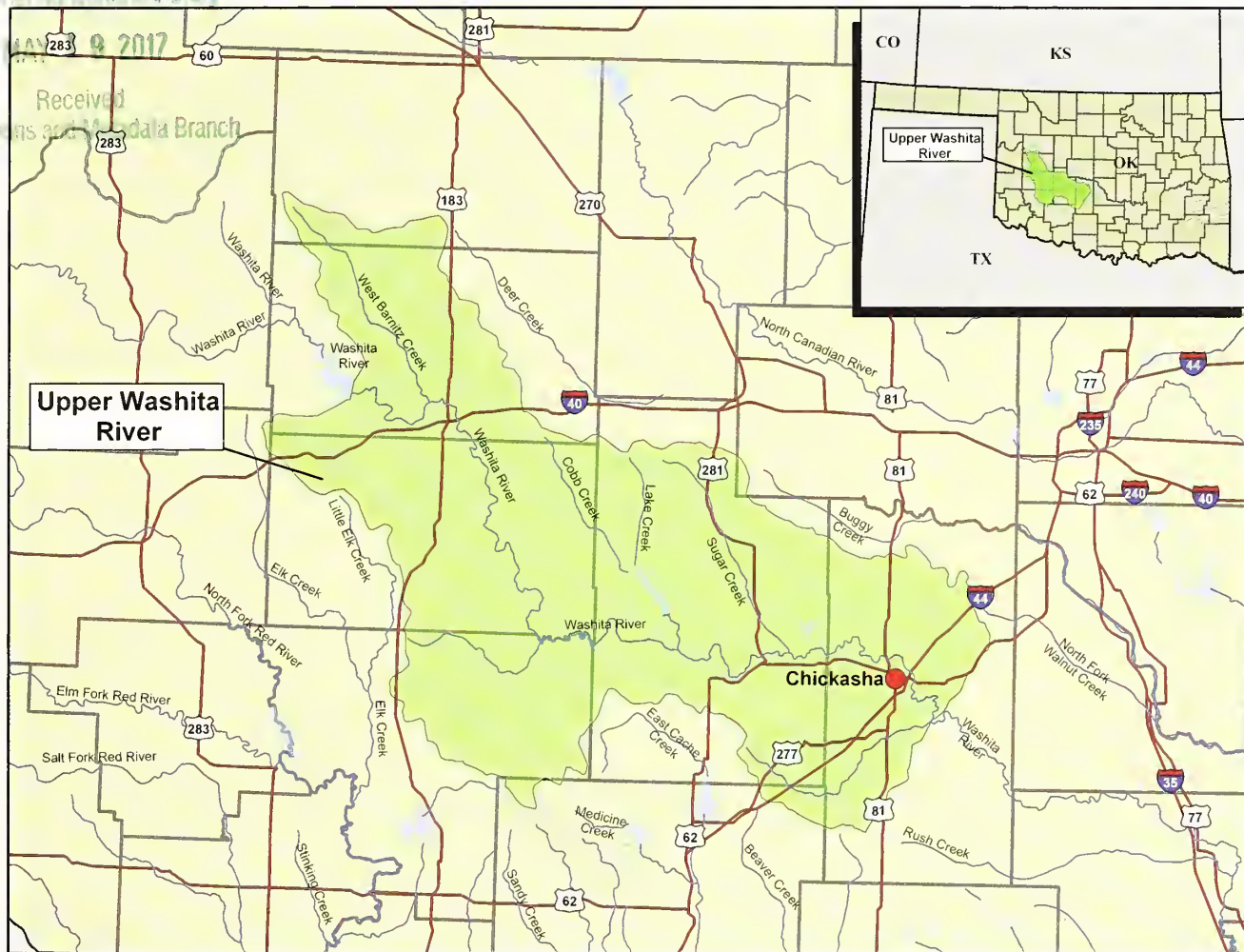
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Conservation Effects Assessment Project (CEAP)

Watershed Fact Sheet

Upper Washita River, Oklahoma: 2004-2006

An ARS* Benchmark Research Watershed, one of 24 CEAP watershed projects.



CEAP Assessment

Evaluate conservation practice effects on soil quality, water quality and quantity, and wildlife habitat.

Issues: Runoff carries sediment and excess nutrients to Lake Texoma, the second largest reservoir in Oklahoma.

Watershed Description

- About 2 million acres
- Predominantly agricultural
- Streams have been designated impaired water bodies by Oklahoma.
- Impaired water quality parameters: phosphorus, turbidity, oxygen, and pathogens.
- A Total Maximum Daily Load (TMDL) limit is planned for phosphorus and turbidity.

*Agricultural Research Service



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Dr. McIntyre (Support Scientist, Ecologist) taking water quality measurements in a stream in the Fort Cobb watershed (Upper Washita, Oklahoma).



Farmer working his field.

Approach

Water Sampling: Phosphorus, nitrate-nitrogen, and sediment

Watershed Models: SWAT (Soil and Water Assessment Tool), EPIC (Erosion Productivity-Impact Calculator), APEX (Agricultural Policy Environmental Extender), and CONCEPTS (CONservational Channel Evolution and Pollutant Transport System)

Research: Hydrologic data from 1961 to the present will be used to calibrate computer models. Farmer surveys will be correlated with water quality sampling; Oklahoma Conservation Commission will assess stream habitat.

Communicating Results

A model will be developed to predict reductions in sediment and nutrients from conservation practices. Reports will describe the hydrology, calibration of models, and effects of practices on water quality and water supply.

Collaborators

- USDA Agricultural Research Service, National Soil Erosion Laboratory
- USDA Natural Resources Conservation Service
- U.S. Geological Survey
- U.S. Environmental Protection Agency
- Great Plains Resource Conservation & Development
- Local landowners
- Oklahoma Conservation Commission
- Oklahoma Climatological Survey
- University of Oklahoma
- Oklahoma State University

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